Notes from the 03/14/06 MI BPM Upgrade Meeting
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These notes can be found in Beams docDB #1526.

Agenda as announced:

Project Announcements
Beam Instrumentation Workshop abstracts (March 15 deadline)
Measurements in MI40 with injected signals
Peter, Marv.
Hardware status:
Combiner Board status, plan for final installation
Transition Board: bids, filters, delivery, checkout and testing.
Transition Board I/O status
Timing Board
Cables, crates, backplanes, Optilogic, other.
Software status:
Front-end software
Online software
Installation and Commissioning
Validation
AOB

0. Project Announcements

- There are three proposed abstracts for the Beam Instrumentation Workshop related to the MI BPM upgrade. Manfred has submitted one for the Transition Board. Luciano, Steve Foulkes and Margaret have circulated for comment one on the front end software. Steve W. is circulating one for the project.

1. Measurements in MI40 with injected signals
Peter, Marv, Bob D.

- Peter reviewed the offset situation. The BPMs with the largest offsets were 410 and 411. 410 was not working in 2.5 MHz because of the fact that until today it had an old combiner box that filtered out 2.5 MHz.

- S11 measurements were attempted from upstairs. The results were not satisfactory so signals were injected in the tunnel and offsets were measured. Comparing these to the offsets seen with data it seems that the offsets are likely coming from the cables.

- There was a long discussion about whether such a thing is "normal" for pairs of cables. It would take either very mismatched (length)

cables or possibly cables with large attenuation differences.

- To understand the problem better measurements will be made around the whole ring. Signals will be split and injected in the tunnel. A and B signals will be measured upstairs as well as phase differences. Using that more information can be gathered on the extent of the differences and how well they agree with the electrical offsets used with the old system. Some of the measurements have already been made in MI60 and MI10. Some help was requested for people to do the measurements.

2. Hardware status:
   Combiner Board status, plan for final installation
   Transition Board: bids, filters, delivery, checkout and testing.
   Transition Board I/O status
   Timing Board
   Cables, crates, backplanes, Optilogic, other.

- 29 combiner boxes were installed last week. About 5 more are left to install + the 7 non-combiner combiner boards. Decision was made to build all 10 non-combiner combiner boxes (7 to install + 3 spares). In addition, all combiner boards will be installed in empty boxes so that spares will be available, about 1/2 vertical and 1/2 horizontal.

- Transition Board. The printed circuit boards are being fabricated. There was some trouble with the front panels, getting the final design to the company but that finally went out Friday. We expect 3 boards as soon as LACE can stuff them. The parts need to go to LACE, Bob Forster and Andrea Saewert will do that. All the filters have been paired. A test procedure for the transition boards is being put together by Andrea.

- Transition Board I/O controller. Stefano is working on the schematics for the improved design. He is on schedule.

- Bob Forster is contacting CASCO about the cables that have not yet been delivered.

- Backplane requisition has been written and is going into the system.

- Air dam requisition has been written and is going into the system.

- No decision made yet on Optilogic or alternative(s) for VME crate remote control/power management/monitoring.

- Timing boards are all hardware ready. The problem with FPGA's turned out to be a different problem that was easily solved. We easily have all boards that are needed. The transition cards that communicate

with the transition board I/O cards are ready for testing.

- Short discussion of crate assembly and preparation for installation. Tim is coordinating the activity and will work with many people to plan for crate assembly and testing so that all 7 installations will be fully prepared by the time beam returns.

3. Software status:
   Front-end software
   Online software

- All MVME's are checked out and ready.

- ACNET devices, IP addresses, VxWorks, PMC cards, are all ready.

- Flash buffers are now dynamically assigned. Each cycle will use the number required and the total available for all flash buffers is set to 400. This leaves about 150 MByte free on the FE memory.

- Online/controls applications are ready.

4. Validation

- Rob showed some plots to compare closed orbit and TBT position data and also p and pbar position data.

- His plots can be found in beams-doc-2203.

- In summary, it looks like the TBT and CO measurements of pbars agree, which is good. There was some question about the p and pbar position comparison (it looks reasonably close) and whether these should be the same, given the states that are being looked at.

- More details will be available when he writes a full note on the topic (and it will be part of the All Experimenters Meeting talk on April 3).

5. AOB